Pace Analytical Services, LLC
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(317)228-3100

December 08, 2016

Mr. Rhett Moody
Duke Energy (Edwardsport Generating Station)
15424 E St. Rd 358
Edwardsport, IN 47528

RE: Project: 65:501 Outfall
Pace Project No.: 50155793

Dear Mr. Moody:
Enclosed are the analytical results for sample(s) received by the laboratory on October 04, 2016. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Revised Report: Issued to remove "001" from the Outfall 501 sample ID.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Kenneth Hunt
kenneth.hunt@pacelabs.com
Project Manager

Enclosures

cc: Mr. Raoul Gabhart, Duke Energy (Edwardsport Generating Station)
Mr. Seth Masterson, Duke Energy
Mr. Randy Monk, Duke Energy Edwardsport IGCC
Mr. Mark Peacock, Duke Energy Edwardsport IGCC
Mr. Andrew Wilson, Duke Energ

REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 65:501 Outfall
Pace Project No.: 50155793

Indiana Certification IDs

7726 Moller Road, Indianapolis, IN 46268
Illinois Certification #: 003971
Indiana Certification #: C-49-06
Kansas/NELAP Certification #:E-10177
Kentucky UST Certification #: 80226
Kentucky WW Certification #:98019
Ohio VAP Certification #: CL-0065
Oklahoma Certification #: 2016-075
Texas Certification #: T104704355-16-10
West Virginia Certification #: 330
Wisconsin Certification #: 999788130
USDA Soil Permit #: P330-16-00257

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SAMPLE SUMMARY

Project: 65:501 Outfall
Pace Project No.: 50155793

Lab ID	Sample ID	Matrix	Date Collected	Date Received
50155793001	**65:501 Outfall**	Water	10/01/16 08:45	10/04/16 08:25
50155793002	**Field Blank**	Water	10/01/16 08:45	10/04/16 08:25

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SAMPLE ANALYTE COUNT

Project: 65:501 Outfall
Pace Project No.: 50155793

Lab ID	Sample ID	Method	Analysts	Analytes Reported
50155793001	**65:501 Outfall**	EPA 1631E	WJW	1
		EPA 200.8	CAW	2
		SM 2540C	SKK	1
50155793002	**Field Blank**	EPA 1631E	WJW	1

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ANALYTICAL RESULTS

Project: 65:501 Outfall
Pace Project No.: 50155793

Sample: 65:501 Outfall **Lab ID: 50155793001** Collected: 10/01/16 08:45 Received: 10/04/16 08:25 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
1631E Mercury, Low Level	Analytical Method: EPA 1631E Preparation Method: EPA 1631E							
Mercury	**1.79**	ng/L	0.52	1	10/09/16 11:15	10/10/16 11:52	7439-97-6	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8							
Arsenic	ND	mg/L	0.0010	1	10/08/16 08:45	10/10/16 19:16	7440-38-2	
Selenium	**0.0010**	mg/L	0.0010	1	10/08/16 08:45	10/10/16 19:16	7782-49-2	
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**30**	mg/L	10.0	1		10/06/16 12:28		

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ANALYTICAL RESULTS

Project: 65:501 Outfall
Pace Project No.: 50155793

Sample: Field Blank **Lab ID: 50155793002** Collected: 10/01/16 08:45 Received: 10/04/16 08:25 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
1631E Mercury, Low Level	Analytical Method: EPA 1631E		Preparation Method: EPA 1631E					
Mercury	ND	ng/L	0.50	1	10/09/16 11:15	10/10/16 10:15	7439-97-6	

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QUALITY CONTROL DATA

Project: 65:501 Outfall
Pace Project No.: 50155793

QC Batch: 355575 Analysis Method: EPA 1631E
QC Batch Method: EPA 1631E Analysis Description: 1631E Mercury
Associated Lab Samples: 50155793001, 50155793002

METHOD BLANK: 1645308 Matrix: Water
Associated Lab Samples: 50155793001, 50155793002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ng/L	ND	0.50	10/10/16 09:57	

METHOD BLANK: 1645309 Matrix: Water
Associated Lab Samples: 50155793001, 50155793002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ng/L	ND	0.50	10/10/16 10:45	

METHOD BLANK: 1645310 Matrix: Water
Associated Lab Samples: 50155793001, 50155793002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ng/L	ND	0.50	10/10/16 12:51	

LABORATORY CONTROL SAMPLE: 1645311

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ng/L	5	4.97	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1645312 1645313

Parameter	Units	50155615002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ng/L	6.05	10	10	16.4	16.4	104	104	71-125	0	24	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1645314 1645315

Parameter	Units	50155617001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ng/L	1.95	9	9	10.6	10.8	96	98	71-125	2	24	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALITY CONTROL DATA

Project: 65:501 Outfall
Pace Project No.: 50155793

QC Batch: 355012 Analysis Method: EPA 200.8
QC Batch Method: EPA 200.8 Analysis Description: 200.8 MET
Associated Lab Samples: 50155793001

METHOD BLANK: 1642219 Matrix: Water
Associated Lab Samples: 50155793001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0010	10/10/16 19:07	
Selenium	mg/L	ND	0.0010	10/10/16 19:07	

LABORATORY CONTROL SAMPLE: 1642220

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	.04	0.041	102	85-115	
Selenium	mg/L	.04	0.040	101	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1642221 1642222

Parameter	Units	50155632002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/L	0.0014	.04	.04	0.043	0.043	103	104	70-130	1	20	
Selenium	mg/L	0.0012	.04	.04	0.040	0.041	98	100	70-130	2	20	

MATRIX SPIKE SAMPLE: 1642223

Parameter	Units	50155748002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	0.0016	.04	0.043	102	70-130	
Selenium	mg/L	ND	.04	0.041	100	70-130	

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QUALITY CONTROL DATA

Project: 65:501 Outfall
Pace Project No.: 50155793

QC Batch: 355030 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 50155793001

METHOD BLANK: 1642302 Matrix: Water
Associated Lab Samples: 50155793001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	10/06/16 12:26	

LABORATORY CONTROL SAMPLE: 1642303

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	300	288	96	80-120	

SAMPLE DUPLICATE: 1642304

Parameter	Units	50155648015 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	480	495	3	10	

SAMPLE DUPLICATE: 1642305

Parameter	Units	50155970001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	342	336	2	10	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALIFIERS

Project: 65:501 Outfall
Pace Project No.: 50155793

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 65:501 Outfall
Pace Project No.: 50155793

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
50155793001	**65:501 Outfall**	EPA 1631E	355575	EPA 1631E	355605
50155793002	**Field Blank**	EPA 1631E	355575	EPA 1631E	355605
50155793001	**65:501 Outfall**	EPA 200.8	355012	EPA 200.8	355459
50155793001	**65:501 Outfall**	SM 2540C	355030		

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

PWT

Page : 1 Of 1

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	Duke Energy Edwardsport IGCC Generating Station	Report To:	Rhett Moody	Attention:	
Address:	15424 E St. Rd 358	Copy To:		Company Name:	
	Edwardsport, IN 47528			Address:	
Email:	rhett.moody@duke-energy.com	Purchase Order #:		Pace Quote:	
Phone:	812-396-9009 Fax:	Project Name:	Outfall 501	Pace Project Manager:	kenneth.hunt@pacelabs.com,
Requested Due Date:		Project #:		Pace Profile #:	

Regulatory Agency: —

State / Location: IN

SAMPLE ID
One Character per box.
(A-Z, 0-9 / , -)
Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	Requested Analysis Filtered (Y/N): Metals, Total (Arsenic & Sele	Total Dissolved Solids (TDS)	Low Level Mercury	Residual Chlorine (Y/N)	50155793
1	65:501 Outfall ~~001~~ KSH per Raoul Gobhart 12/8	WT	G			10-1-16	0845		3			1							X	X	X		001
2	Field Blank	WT	G			10-1-16	0845		1												X			002
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: TEMP In C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
	Seth Masterson	10-3-16	0900	FED EX						
	FED EX			Mark Kelly	10.4.16	825	0.5	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Seth Masterson

SIGNATURE of SAMPLER: Seth Masterson DATE Signed: 10-3-16

Sample Condition Upon Receipt

Pace Analytical

Client Name: DUKE ENERGY Project # 50155793

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace Other _____

Tracking #: 6907 5121 6363

Custody Seal on Cooler/Box Present: ☑ yes ☐ no Seals Intact: ☑ yes ☐ no

Date/Time 5035A kits placed in freezer: _____

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other _____

Thermometer 1 2 3 4 5 6 (A) B C D E F **Type of Ice:** (Wet) Blue None ☑ Samples on ice, cooling process has begun

Cooler Temperature (Initial/Corrected) 0.5 / 0.5 **Ice Visible in Sample Containers:** ☐ yes ☐ no

Temp should be above freezing to 6°C

Comments:

Date and initials of person examining contents: ML 10-4-16

Are samples from West Virginia? Document any containers out of temp.	☐Yes	☑No		1.
Chain of Custody Present:	☑Yes	☐No	☐N/A	2.
Chain of Custody Filled Out:	☑Yes	☐No	☐N/A	3.
Chain of Custody Relinquished:	☑Yes	☐No	☐N/A	4.
Sampler Name & Signature on COC:	☑Yes	☐No	☐N/A	5.
Short Hold Time Analysis (<72hr):	☐Yes	☐No	☑N/A	6.
Rush Turn Around Time Requested:	☐Yes	☐No	☑N/A	7.
Containers Intact:	☑Yes	☐No	☐N/A	8.
Sample Labels match COC: -Includes date/time/ID/Analysis	☑Yes	☐No	☐N/A	9.
All containers needing acid/base pres. have been checked? **exceptions: VOA, coliform, TOC, O&G** All containers needing preservation are found to be in compliance with EPA recommendation (<2, >9, >12) unless otherwise noted.	☑Yes	☐No	☐N/A	10 (Circle) HNO3 H2SO4 NaOH NaOH/ZnAc
Residual Chlorine Check (SVOC 625 Pest/PCB 608)				11. Present Absent
Residual Chlorine Check (Total/Amenable/Free Cyanide)				12. Present Absent
Headspace in VOA Vials (>6mm):	☐Yes	☐No	☑N/A	13
Headspace Wisconsin Sulfide	☐Yes	☐No		14
Trip Blank Present:	☐Yes	☐No	☑N/A	15
Trip Blank Custody Seals Present	☐Yes	☐No	☑N/A	
Project Manager Review				
Samples Arrived within Hold Time:	☑Yes	☐No	☐N/A	15.
Sufficient Volume:	☑Yes	☐No	☐N/A	16.
Correct Containers Used:	☑Yes	☐No	☐N/A	17.

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: Raoul Gabbard Date/Time: 12/6/16 phone

Comments/ Resolution:

Remove the Sample 001 after the correct sample ID 65: SD1 Outfall.

Project Manager Review: KC Jones **Date:** 10-4-16

Form F-IN-Q-290-rev.09, 13Oct2015

Sample Container Count

CLIENT: DUKE ENERGY

COC PAGE 1 of 1

COC ID# _____

Project # 50155793

Sample Line Item	DG9H VG9H	AG1U	WGFU	AG0U	R	Bulk Kit 4 / 6	BP2N	BP2U	BP2S	BP3N	BP3U	BP3S	AG3S	AG1H	BP3C	BP1U	SP5T	AG2U				Matrix Sl/Ww/Ot (Soil/Water/Other)	pH <2	pH >9	pH>12
1										1	1							1					✓		
2																		1							
3																									
4																									
5																									
6																									
7																									
8																									
9																									
10																									
11																									
12																									

Container Codes

DG9H	40mL HCL amber voa vial	AG0U	100mL unpreserved amber glass	BP1N	1 liter HNO3 plastic	DG9P	40mL TSP amber vial
AG1U	1liter unpreserved amber glass	AG1H	1 liter HCL amber glass	BP1S	1 liter H2SO4 plastic	DG9S	40mL H2SO4 amber vial
WGFU	4oz clear soil jar	AG1S	1 liter H2SO4 amber glass	BP1U	1 liter unpreserved plastic	DG9T	40mL Na Thio amber vial
R	terra core kit	AG1T	1 liter Na Thiosulfate amber glass	BP1Z	1 liter NaOH, Zn, Ac	DG9U	40mL unpreserved amber vial
BP2N	500mL HNO3 plastic	AG2N	500mL HNO3 amber glass	BP2A	500mL NaOH, Asc Acid plastic	SP5T	120mL Coliform Na Thiosulfate
BP2U	500mL unpreserved plastic	AG2S	500mL H2SO4 amber glass	BP2O	500mL NaOH plastic	JGFU	4oz unpreserved amber wide
BP2S	500mL H2SO4 plastic	AG2U	500mL unpreserved amber glass	BP2Z	500mL NaOH, Zn Ac	U	Summa Can
BP3N	250mL HNO3 plastic	AG3U	250mL unpreserved amber glass	AF	Air Filter	VG9H	40mL HCL clear vial
BP3U	250mL unpreserved plastic	BG1H	1 liter HCL clear glass	BP3C	250mL NaOH plastic	VG9T	40mL Na Thio. clear vial
BP3S	250mL H2SO4 plastic	BG1S	1 liter H2SO4 clear glass	BP3Z	250mL NaOH, Zn Ac plastic	VG9U	40mL unpreserved clear vial
AG3S	250mL H2SO4 glass amber	BG1T	1 liter Na Thiosulfate clear glass	C	Air Cassettes	VSG	Headspace septa vial & HCL
AG1S	1 liter H2SO4 amber glass	BG1U	1 liter unpreserved glass	DG9B	40mL Na Bisulfate amber vial	WGFX	4oz wide jar w/hexane wipe
BP1U	1 liter unpreserved plastic	BP1A	1 liter NaOH, Asc Acid plastic	DG9M	40mL MeOH clear vial	ZPLC	Ziploc Bag